DOCUMENT RESUME

ED 319 574 RC 017 562

AUTHOR Mann, William
TITLE Microstudy: An Experiment in Second Language Reading Comprehension.
PUB DATE 12 Feb 90
NOTE 15p.
PUB TYPE Reports - Research/Technical (143) -- Dissertations/Theses - Undetermined (040)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Concept Formation; *Context Clues; *Decoding (Reading); Error Analysis (Language); French; High Schools; Language Skills; *Reading Comprehension; *Reading Strategies; Rural Urban Differences; Second Language Instruction; *Second Language Learning; Vocabulary Development; Word Recognition

ABSTRACT

This paper reports on an experiment designed to determine whether a novice second-language (L2) reader can be characterized as concept-oriented or syntactic-structure oriented. The operating premise was that high school L2 students read and understand not so much by translating as by combining conceptual fragments into a tentative "script," which develops as the student reads the passage. This premise implies that the novice reader does not rely on grammatical or syntactic cues to extend meaning. The sample consisted of 32 high school French students in two schools (one rural and one urban) and a control group of three French-fluent adults. The subjects were asked to read a French passage and retain as much information as possible. Each subject performed written and oral reviews. A check-off sheet was devised to cover 103 most likely conceptual fragments to be mentioned in the course of the oral interview. The students were able to read just over half of the conceptual fragments understood by the control group. Comprehension of the passage ranged from average to excellent. Experimenters observed that students generally were able to process new conceptual items in an "intuitive" rather than systematic approach to L2 reading. The analysis also indicates that conceptual processing over time facilitates L2 reading performance. The way the subjects maintained glaringly weak scripts in the face of common sense supports the premise that L2 reading is automatic, compelling, and persistent. Suggestions for L2 instruction include maximizing pre-reading vocabulary practice. (TES)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED319574

Microstudy: an Experiment in Second Language Reading Comprehension

by William Mann
Webster County High School
Upper Glade, WV 26266

Rationale

The author is seeking to determine whether a novice second language (L2) reader can be characterized as concept oriented or syntactic structure oriented as a result of a reading recall and interview experiment. The operating premise will be that high school readers of L2, in this case French, read by combining conceptual fragments into a tentative "script" which develops as the student reads and perhaps rereads the passage. It is further assumed that decisions about content and sequence of the script happen as a result of skimming for subject and predicate, building from the known to the unknown, as the student seeks to solidify the key concepts of the passage.

This premise implies that the novice reader will not rely on grammatical or syntactic cues to extend meaning. Instead, (s)he will examine the interaction between the significant knowns of vocabulary in view of reaching a logical, coherent and credible script or version. It follows then, that frustration or the cessation of reading will occur when vocabulary rather than syntactic constraints render script-building impracticable.

Before the above premise can be operationalized, we must question whether L2 reading is an authentic process, or just a disguised version of translation as it has sometimes been suggested. Research done with elementary to secondary age L2 readers in France by Goodman and others has determined that L2 reading may be characterized as an "automatic" processing for word meaning, a process so "compelling" that subjects will read in L2 even when instructed not to. These researchers conclude that reading, not translation, is the method of choice by which L2 readers derive meaning from the written word (1).

Assuming that L2 reading is a process of script-building, facilitated by the recognition and networking of both key and supporting conceptual fragments, and assuming this process is authentic, automatic and compelling, several instructional applications can be deduced. First of all, as Ulijn and others have suggested (2), pre-reading instructional emphasis should be placed upon the processing of semantic units, be they word or phrase length, in the content area to be read.

Secondly, pre-reading practice should maximize the number of manipulations or process time, so that recognition remains automatic during reading. Another author (Bowman) has compared L2

---

(1) Goodman, Gail, Haith, Marshall M. and Guttentag, Robert E. "Reading in a Second Language: Automatic Processing of Word Meaning," ED 201211.

(2) Ulijn, J. "Conceptualization in Second Language Reading," paper read at the 5th IAL Congress, August, 1978, ED 171 110.

RC 017562

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

/ This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

William Mann

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

BEST COPY AVAILABLE

reading to the art of parachuting (3). The L2 reader is always jumping into the unknown, having little idea of where or how (s)he might land. To extend this analogy, L2 reading without pre-reading vocabulary processing is like parachuting without double-checking your chute-packing; perhaps it will work, perhaps it will not.

Assuming the L2 reading process as depicted, and further assuming that pre-reading instructional strategies have a positive effect on L2 reading fluency, then it follows that both L2 reading process and comprehension can be designed as variables to determine the effects of an instructional approach to L2 reading. Therefore, one might reasonably expect that a student's comprehension of a given text will vary, depending upon his pre-reading experiences as they link to the content of that text.

If this variation in comprehension can be operationalized into a significant difference in the number of conceptual fragments which a subject recalls via post-reading interview, one may be able to both measure strength of script-building and infer effects of pre-reading experience with the content. It is further assumed that the non-reader, or translator, is put into an extremely disadvantageous position by this design, since translation is mechanical, and neither compelling nor automatic. Therefore the translator will not recall as efficiently from long-term memory as the reader, who has deep processed information via script-building.

Test Instrument

A short article was written concerning the French city, Poitiers, and a teen-age couple, Eve-Marie Pallier and Jean-Luc Dumont. The facts about the city are true, the author having lived in Poitiers for two years. However, it was assumed that this would be novel information for the subjects in the reading comprehension experiment. Eve-Marie and Jean-Luc are not fictional characters, their background and activities as depicted are basically true to life. It was assumed that this choice of content would stimulate reader interest, allowing for a certain threshold of comprehension that would encourage script-building for all subjects in the experiment. It is also possible that if a core or "lowest common denominator" script can be constructed from the interviews, error analysis of deviant script lines might provide hypotheses on how the L2 reader links concepts during reading.

The reading passage consists of 270 words contained in 5 short to medium length paragraphs. Fully 90% of the vocabulary is consistent with the content areas covered in the first 10-12 months of beginning French classes in West Virginia. Several of

---

(3) Bowman, M. "A Comparison of Content Schemata and Textual Schemata or the process of parachuting," Reading World, V. 21, pages 14-22.

the unfamiliar words are close visual cognates to English, and the most unfamiliar terms are located in highly suggestive contextual positions. There are two cases of the passe compose (past perfect) in the second paragraph, purposely placed in order to ascertain whether novice readers will notice a tense shift (syntactic cueing) while reading L2.

It should also be noted that the overall, 3/4 page length of the reading passage is longer than most high school readers have encountered in the typical, audio-lingual instructional environment. The length was designed to compel the subject to read, not translate the passage.

The Sample

The sample consists of 32 high school students of French language, ages 15-18 and 3 adult, L2 French-fluent members of the control group. The students were selected on a volunteer basis from the French 2, 3 and 4 sections of both schools. It was felt that randomized selection of subjects might have jeapordized the significance of the results, unwilling subjects being more likely to sabotage the recall phase of the experiment due to lack of interest during reading.

The sample was initially sorted by school, with 17 and 15 students at Webster County High (WCHS) and Charleston Catholic High (CCHS) respectively. There were three discrete groupings at WCHS: 8 second year students (12 months of treatment), 5 students with 20-23 months of French study, and 4 students with 30 months of experience. The CCHS students were grouped initially as follows: 3 students with 12 months treatment, 6 with 23 months and 6 with 33 months experience.

The N of this experiment could be considered as all secondary students of French, grades 10-12, in the State of West Virginia. One estimate of this N is 1500 students, following discussion with the State Foreign Language Coordinator.

Procedure

The subjects were asked to read an untitled passage in French, with the stated goal of retaining as much information as possible. Students were encouraged to mark, underline or annotate the French passage as desired. Subjects were told they would not be permitted to use the reading passage or their notes during the recall phase of the experiment. Students were cautioned as to the confidentiality of the entire process for as long as the experiment lasted. They were promised a full report of the results as well as "all the answers," post-experiment.

This was not a timed reading experiment; however, most students observed by the author were able to complete the read/study phase within 10-15 minutes. Upon surrendering the reading passage, subjects were asked to recall in English, in writing, everything they could remember about the passage.

Summarizing in native language (L1) is a technique commonly used for the testing of L2 reading comprehension, (see the work of Benedetto and Kozminsky with college-age students for examples

of summarizing research) (4). However, it is this author's position that latent understanding of the passage, or the more covert relationships between concepts expressed in the subject's internal script would not necessarily surface via the writing activity. Therefore, an oral interview phase was planned for each subject in the experiment, the written recall to serve as a refresher or starting point for the interview.

It is generally accepted in the literature that multiple choice or true/false questioning is problematic as a testing device for L2 reading comprehension. The criticism centers on the process of script-building which occurs as the subject processes the test itself. Quite simply, if test content, whether written or orally cued, is even moderately independent of the reference text, the person being tested may be able to extrapolate or adjust his script according to the conceptual network formed within the test. Thus, the test may not be measuring comprehension of the reading passage; instead, it may more accurately be measuring comprehension of the concepts suggested by the test design (5). Therefore, to increase test validity, an observational phase was designed into the experiment, where strength of conceptual understanding could be probed by the interviewer, orally and in English.

Interviews were scheduled to last from 10-25 minutes, to vary according to the personal dynamics between the interviewer and interviewee, and according to the idiosyncrasies of the scripts being examined. Due to the difficulties of scheduling around various tests and uncooperative teachers in the two high schools involved, it was not feasible, in most cases, to interview the subjects immediately following the written recall phase of the experiment. Thus, retention time varied from a few minutes in 3 cases, to overnight in 5 cases, to 48 hours in 9 cases at WCHS. 9 students waited 60 hours between the written and interview phases, while 6 students waited between 1 and 3 hours at CCHS. The written summary was designed to minimize conceptual loss due to forgetting.

A check-off sheet was devised to cover the most likely conceptual fragments to be mentioned in the course of an interview. The reading passage was thus broken down into 103 fragments. It goes without saying that a check-off system is arbitrary in the particular way the global content was segmented.

---

(4) see Kozminsky, E and Graetzn N. "First vs. Second Language Comprehension: some evidence from text summarizing," Journal of Research in Reading, V. 9, July 86, pages 3-21.

see also Benedetto, Rosemary A. "Language Ability and the Use of Top-Level Organizational Strategies," paper presented at the Annual Meeting of the National Reading Congress, December 1985, ED 266 437.

(5) see Urquhart, A. H. "Comprehensions and Interpretations," Reading in a Foreign Language, V. 3, No. 2: 1987, pages 387-409.

For instance, it was felt that in the case of "a very small table," 2 checks should be recorded if the subject mentioned both "small" and "table," regardless of whether the word "very" was emitted.

In addition, it was felt that the smaller conceptual fragments would help generalize the scoring process, and give contrast to those scripts which had inconsistencies with the global meaning of the actual text. In this way, the approximate nature of L2 reading comprehension might be more accurately measured (6).

The interview protocol borrows from the principles of J. Piaget's "methode clinique," by the use of counter-questioning or counter proposal to guage the persistence of conceptual links in the subject's script. This technique, as applied to teenage subjects, proves very successful if a kind of playful banter can be cultivated between interviewer and interviewee. If this rapport is established during the interview, it is easy to challenge certain parts of the script by suggesting, "Are you just making this up or what?" During the 32 interviews, this bemused approach to interrogation produced a clear dichotomy of responses. Either something like, "Well yeah, I guess I really didn't read that, but how did you know?" or "No, I'm not making it up!" When asked to justify a particular script fragment, students would invariably reply with something like, "Because I read it, and I can still see that word...it sounds like_____."

This author can report no overt attempt to deceive on the part of the subjects; instead, the students demonstrated a willingness to express what they had "scripted," and a desire to reflect on those parts of the reading where inconsistencies were surfacing. In those cases where extended reflection might result in unsupported invention, the countering technique proves useful in separating actual comprehension from speculation on the part of the subjects.

This method of questioning can be illustrated by discussion of the fragment, "les cheveux qui lui retombent sur les epaules," which the author found necessary to probe in almost every case. This fragment is a simple reference to shoulder-length hair. Students recognizing "les epaules" as shoulders had little difficulty in defending their comprehension of this fragment. Several types of questions were used, depending upon the power of the student's response. From the direct "How do you know it comes down to her shoulders?" to "Is her hair cut straight and chin length like alot of French girls?" or "Is it waist, shoulder-blade or shoulder length?" Valid or tallied responses varied from "Because I remember epaules," to references to

---

(6) see the checklist/recall work of Bernhardt, Elizabeth B. "Testing Foreign Language Reading Comprehension: The Immediate Recall Protocol," Die Unterrichtspraxis, V. 16, No. 1: 1983, pages 27-33.

Jean-Luc's hair length (also long), to the approximate "I'm not really sure, but those words were telling about the length of her hair, and I understood shoulder length."

Since L2 reading is posited as a process of hypothesis-testing and script-building, "a psycholinguistic guessing game," (7) lack of analysis is not to be confused with lack of comprehension. Different students understood "long, shoulder-length hair" via a variety of idiosyncratic, perhaps even egocentric conceptual schemes. Efforts at comprehension were tallied whenever there was demonstration of process to arrive at meaning. It can be noted here that 25 out of the 32 student subjects understood this particular fragment.

Every effort is made to avoid cueing the answer by the question itself. Each interview begins with the general request, "Please just tell me in your own words as much as you can about what you have read." After a subject recounts the initial paragraph, (introducing Eve-Marie and Jean-Luc as well as the city of Poitiers), redirecting or summative questions are asked: "Tell me, from what you have read, what you might expect if you were in (Poitiers) (this city) (village) (place) or "OK, you've told me about the old churches, the university and Poitier's place in history, what else can you mention?"

Every attempt is made to examine the totality of conceptual links made between Eve-Marie, Jean-Luc and their activities in Poitiers, as well as general information about the city and the other young people mentioned.

Especially in cases where the subject's low self-image seemed to hinder script expression, this author would persist beyond the first or second "I don't know," often with startling results such as, "Oh yeah, now I remember, they went past the train station on the way home!" In this case, the subject remembered "la gare," although not comprehending the "qui pass au-dessus de" (goes over top of), referring to the pedestrian bridge (passarelle) which spans the valley where the train station is located. Nevertheless, whenever the fragment "the train station" is emitted, it is tallied, regardless of linkage to the neighboring fragments.

The same procedure was used with a control group of three American teachers of French. It was felt that this control group might help determine whether the 103 conceptual fragments are realistic as possible outcome of the recall/interview phase. The control group emitted an average of 95 fragments out of the theoretical total of 103. Therefore, general comprehension coefficients will be reported with the adjusted total of 95 fragments in the denominator.

---

(7) Goodman, K. S. in Hatch, E. "Research on Reading a Second Language," Journal of Reading Behavior, V. 6, Ap 74, page 57.

Results

As a result of general reading comprehension, a coefficient § has been calculated within treatment groups for both schools.

$$\S = \frac{\text{mean conceptual fragment score}}{\text{mean conceptual fragment score of control group}}$$

	12 months treatment	20-23 months treatment	30-33 months treatment
	n= 8	n= 5	n= 4
WCHS	§= .42	§= .545	§= .632
	M= 39.875	M= 51.8	M= 60
	n= 3	n= 6	n= 6
CCHS	§= .516	§= .481	§= .663
	M= 49	M= 45.667	M= 63

From the above it is apparent that gains in § are steady across the three treatment groups at WCHS. CCHS shows an increased § for the longest treatment group as compared to the other two. Comparing WCHS and CCHS between cells shows small differences which will be t-tested for significance.

A weighted average of the above § coefficients yields a § overall= .532, n=32. In other words, the subjects tested were able to read just over half of the conceptual fragments read by the control group. It was the author's observation during the interviews that comprehension of the passage ranged from average to excellent. Several patterns of error will be discussed in the concluding section.

A. Is there a significant difference between the means of WCHS and CCHS for 12 months treatment?

Ho: M1= M2
Ha: M1, M2 not equal
confidence level: .05
degrees of freedom= 9
critical t value= 2.262
test statistic $T_d = \frac{d-M}{Sd}$ Where M= 0 and d= 49-39.875= 9.125
(from hypothesis)

n(WCHS)= 8
(Ex^2)= 101761
$E(x^2)$= 13633
S^2(WCHS)= 132.982

n(CCHS)= 3
(Ex^2)= 21609
$E(x^2)$= 7229
S^2(CCHS)=13

S^2pooled= 106.319
S^2d= 48.73
Sd= 6.981
Td= 9.125/6.981= 1.307

Conclusion: since 1.307 < 2.262, critical t, fail to reject Ho. In other words, the means of these two groups are <u>not</u> significantly different at the .05 level.

B. Is there a significant difference between the means of WCHS and CCHS for 20-23 months treatment?

Ho: M1= M2
Ha: M1, M2 not equal
confidence level= .05
degrees of freedom= 9
critical t value= 2.262
test statistic $T_d = \frac{d-M}{Sd}$ Where M= 0 and d= 51.8-45.667= 6.133
(from hypothesis)

n(WCHS)= 5
(Ex^2)= 67081
$E(x^2)$= 13983
S^2(WCHS)= 141.7

n(CCHS)= 6
(Ex^2)= 75076
$E(x^2)$= 13746
S^2(CCHS)= 246.67

S^2pooled= 200.017
S^2d= 73.34
Sd= 8.564
Td= 6.133/8.564= .72

Conclusion: since .72 < 2.262, critical t, fail to reject Ho. In other words, the means of these two groups are not significantly different at the .05 level.

C. Is there a significant difference between the means of WCHS and CCHS for 30-33 months treatment?

Ho: M1=M2
Ha: M1, M2 not equal
confidence level: .05
degrees of freedom= 8
critical t value= 2.306
test statistic $Td = \frac{d-M}{Sd}$ where M=0 and d= 63-60= 3
(from hypothesis)

n(WCHS)= 4
$(Ex)^2$= 57600
$E(x^2)$= 14486
S^2(WCHS)= 28.667

n(CCHS)= 6
$(Ex)^2$= 142884
$E(x^2)$= 24214
S^2(CCHS)= 80

S^2pooled= 60.75
S^2d= 25.312
Sd= 5.031
Td= 3/5.031= .596

Conclusion: since .596 < 2.306, critical t, fail to reject Ho. In other words, the means of these two groups are not significantly different at the .05 level.

Discussion

Ms. Robin Snyder, the teacher who collaborated with the author in scheduling and administering the reading/writing phase of the experiment agreed to an interview concerning the method of reading instruction used at CCHS. In the course of the interview, she mentioned several vocabulary-centered activities that are used across all her classes before reading. For example, new vocabulary is first presented orally by linking the new, unfamiliar item with a known or familiar context.

Ms. Snyder estimated that students are able to process new conceptual items "several times," in what she characterized as an 'intuitive" rather than systematic approach to L2 reading instruction. However, the variety of oral and visual activities she mentioned indicates an awareness that L2 reading can be taught as a distinct skill.

Likewise, the instructional program at WCHS views L2 reading as an authentic, discrete process. Therefore, students are encouraged to develop conceptualization techniques as mentioned in the Rationale. CCHS was not selected with foreknowledge that similar approaches to L2 reading instruction were being used in both schools. However, the presence of conceptual strategies related to L2 reading instruction may, in part, explain the similarity of main effects between both schools.

Thus the hypothesis concerning the facilitative effect of conceptual learning strategies on L2 reading comprehension cannot be confirmed or rejected as a result of the above between schools analysis. Further experimentation with qualitatively different treatment groups is required.

Results, continued

Although the above analysis between schools is unable to determine the significance of conceptual processing on the facilitation of L2 reading, the results within schools can be recombined to show a difference between treatment levels. Thus the assumption that L2 reading is an authentic process, subject to improvement if the treatment matches the nature of the phenomenon, may be clarified by further analysis of the data. To do this, the author has combined the 12 month and 20-23 month cells in both schools. This gives a new data configuration which can then be t-tested for means significance within schools.

	12-23 months treatment	30-33 months treatment
WCHS	n= 13 §= .468 M= 44.46	n= 4 §= .632 M= 60
CCHS	n= 9 §= .492 M= 46.78	n= 6 §= .663 M= 63

This data configuration yields means between schools that are statistically equal, and means within schools showing a uniform and perhaps significant increase in comprehension scores. In addition, the sample sizes between cells show a certain symmetry, much more so than in the previous design. These mean differences within schools, 15.54 and 16.22, will be t-tested for significance.

A. Is there a significant difference between the means of treatment groups 12-23 months and 30-33 months within WCHS?

Ho: M1= M2
Ha: M1, M2 not equal
confidence level= .05
degrees of freedom= 15
critical t value= 2.131
test statistic $Td = \frac{d-M}{Sd}$ where M=0 and d= 15.54 (from hypothesis)

n(12-23 mo.)= 13
$(Ex)^2$= 334084
$E(x^2)$= 27616
S^2(12-23 mo)= 159.77

n(30-33 mo.)= 4
$(Ex)^2$= 57600
$E(x^2)$= 14486
S^2(30-33 mo.)= 28.667

S^2pooled= 133.549
S^2d= 43.66
Sd= 6.61
Td= 15.54/6.61= 2.35

Conclusion: since 2.35 > 2.131, critical t, reject Ho. In other words, the means of these two groups are significantly different at the .05 level.

B. Is there a significant difference between the means of treatment groups 12-23 months and 30-33 months within CCHS?

Ho: M1= M2
Ha: M1, M2 not equal
confidence level= .05
degrees of freedom= 13
critical t-value= 2.160
test statistic $Td = \frac{d-M}{Sd}$ where M= 0 and d= 16.22 (from hypothesis)

n(12-23 mo.)= 9
$(Ex)^2$= 177241
$E(x^2)$= 20975
S^2(12-23 mo.)=160.195

n(30-33 mo.)= 6
$(Ex)^2$= 142884
$E(x^2)$= 24214
S^2(30-33 mo.)= 80

S^2pooled= 129.351
S^2d= 35.931
Sd= 5.994
Td= 16.22/5.994= 2.71

Conclusion: since 2.71 > 2.162, critical t, reject Ho. In other words, the means of these two groups are significantly different at the .05 level.

Discussion

The above analysis within schools determines with a 95% confidence factor that conceptual processing over time facilitates L2 reading performance as tested in this experiment. These findings are very significant since students at two different schools, one rural, public and socio-economically disadvantaged, and the other urban, parochial and socio-economically advantaged, exhibited uniform and significant gains when script-building is taken as the model of L2 reading comprehension. These results are of even greater significance when the similar approach to L2 reading instruction taken by both teachers is considered.

This study appears to confirm the reader-parser view of the L2 novice reader as characterized by Ulijn and others. It also brings evidence that L2 reading is an authentic process, chosen by students over translation, and improved by conceptual strategies addressed in the classroom. Furthermore, a possible threshold of significance has been identified, roughly between the completion of the second and third years of French language instruction, as far as gains in reading comprehension are concerned. This interesting possibility needs to be confirmed by further study.

Finally, a Pearson rank coefficient was computed for 10 students at CCHS to determine a possible coorelation between L1, CTBS reading comprehension scores and L2 reading comprehension as tested. The calculated values r=.1455 and accompanying t=.147 fall short of the critical t=2.306. There appears to be no coorelation between the L1 and L2 reading comprehension scores as indicated. The author would conclude that multiple choice vs. recall/interview modes of testing to be one explanation for this remarkable lack of coorelation. There may be others, such as CTBS test sabotage by less than voluntary subjects, a situation which did not affect this particular study.

Final Observations

The author would like to give an illustration of the differences in reading comprehension between script-building and translations by further analysis of the interview with Philippe, a French 3 student at CCHS. His teacher, Ms. Snyder, had made the comment to this writer that Philippe was the only student to do poorly on the written recall phase of the experiment. With this in mind, the interview was to be conducted to ascertain not just what Philippe remembered, but why he had experienced difficulty with the L1 written recall.

The interview began on a very upbeat note, with student and interviewer exchanging greetings in French. However, upon asking the student to retell the story from his notes and/or memory, Philippe became rather nervous and quite apologetic. Only the first paragraph of the test passage was retold with enough detail to allow for further probing; and, it became quickly apparent that no more information would be forthcoming beyond the line

where the name of the high school is mentioned. The author spent several minutes in summation of the 18 fragments mentioned by Philippe, but no new or linking fragments were forthcoming.

From the CTBS scores made available to the author, it was noted that at the 99th percentile, Philippe was the most efficient of the 15 L1 readers sampled at CCHS. Since his L2 reading comprehension coefficient (.189), was not consistent with either his CTBS rating or, more importantly, the CCHS coefficient mean (.532), the author surmised that other factors were at work in this case.

Philippe was then asked if he had understood the instructions of the test. His reply was quite revealing, "I was asked to read the passage, but I didn't. I translated it, and when I gave the reading passage back to the teacher...well, I thought I could remember, but I guess I forgot alot, didn't I?" Philippe remained very apologetic about what he perceived as his failure to perform the task. At this point, the interviewer broke protocol to inform Philippe that what he termed a "goof-up" was in fact unexpected confirmation of what the experiment was all about.

Translation, unlike reading, is neither compelling nor automatic processing of the written word, as Philippe has clearly demonstrated. This interviewer was continually amazed by the ability of students to "pull conceptual fragments out of the air," spontaneously and enthusiastically, even repeating the original French in some cases. These conceptual "guessers" had, unlike Philippe, read the test passage and were actively processing from long-term memory. Philippe chose translation over reading and was unable to recall conceptual fragments as efficiently as his peers.

By comparing the most favored scripts with the check-listed, or control scripts, we have a more objective way of determining the extent to which reading, as process, is compelling or automatic. The students' treatment of the first two sentences of the second paragraph has provided numerous examples of how compelling and convincing the script-building process is in the mind of the novice reader.

Despite the universal understanding of the first sentence, "They are both 17," there was a near universal misunderstanding of the second, "They both go to Camille Guerin high school." It is likely that the descriptive appositive, "a coed high school located near the Science Campus," prevented linking of the high school (lycee) fragment to Eve-Marie and Jean-Luc, and this in spite of their obvious high school age. It was as if the mere mention of la Faculte des Sciences was enough to cause almost everyone to send the two French teenagers off to college!

The persistent and convincing nature of this erroneous script became apparent as subject after subject failed to make the connection between age and level of schooling. The interviewer heard many rationalizations reminiscent of egocentric

speech, ranging from "I think that high school must be just like college over there," to the highly inventive, "They're taking AP courses in Science, to the ingenuous, "It must be like a junior college!" and finally, "It's a special science school." Only one subject, (the student with the highest coefficient of comprehension, .842), correctly reasoned when challenged, "Wait a minute, it has to be high school, they're only 17!"

If a novice L2 reader were to apply a thorough, syntactic, translation-like analysis to the passage under discussion, (s)he would notice that the prepositional phrase "pres de" locates the high school near the Science Campus. However, as Ulijn and others have stated, and as this study has determined, novice L2 readers do not skim for "embedded" syntactic cues. Instead, they choose to "deep-process" the conceptual or semantic structures to construct an approximate meaning. This is the script-building phenomenon as described above.

Once the script has been built, once the semantic or conceptual links have been established in the mind of the reader, the revision process allows for minor changes only. We can conclude that the way subjects maintained their glaringly weak scripts in the face of logic and common sense testifies to the defense of the premise that L2 reading activity is automatic, compelling, persistent and quite convincing in the mind of the reader.

The implications for foreign language instruction are numerous and significant: should we not maximize pre-reading vocabulary practice, phrase and sentence length, in order to minimize faulty script-building? Should we not find ways to teach grammar, the "embeddedness" of syntactic cues, as conceptual fragments, focusing less on how they work and more on what they mean? And finally, should we not revise our evaluation of what we consider to be appropriate comprehension, given the approximate, piece-meal and tentative nature of L2 reading comprehension?